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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,806

04/05/2006

Kosaku Fujinaga

KYP-100-A

4238

21828

7590

01/20/2010

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EXAMINER

BEST, ZACHARY P

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

01/20/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/574,806	Applicant(s) FUJINAGA ET AL.	
	Examiner Zachary Best	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-50 is/are pending in the application.
- 4a) Of the above claim(s) 25-28 and 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-43, 45, 47 and 49 is/are rejected.
- 7) ☒ Claim(s) 44, 46 and 48 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20060405, 20091002</u> . | 6) <input type="checkbox"/> Other: _____ |

ELECTRICALLY CONDUCTIVE MEMBER FOR SOLID OXIDE FUEL-STACK

Examiner: Z. Best S.N. 10/574,806 Art Unit: 1795

Election/Restrictions

1. Claims 25-28 and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on October 2, 2009. The traversal is on the ground(s) that Draper et al. (US 2004/0234830 A1) does not anticipate Group I, and there is no serious burden to Examiner. This is not found persuasive because Draper et al. does anticipate Group I (see abstract and pars. 40 and 44), and there will be a serious burden on Examiner because regardless of search method, the inventions of different limitations will require different search strategies, and the time and effort to consider the relevancy of the collective references would increase proportionally resulting in a serious burden to Examiner. The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the specification does not discuss (1) the laminated metal sheets as claimed in Claims 30-32.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 38-41, 43, 45, 47, and 49 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "the axial direction" in Claims 38-41 is a relative term which renders the claim indefinite. The term "the axial direction" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 43, 45, 47, and 49 recites the limitation "the serial direction" or "the parallel direction." There is insufficient antecedent basis for this limitation in the claim because independent Claim 29 may be only connected in series or only connected in parallel.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an

application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 29 and 36-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Draper et al. (US 2004/0234830 A1).

Regarding Claim 29, Draper et al. teach a fuel cell stack (abstract) comprising a plurality of solid oxide fuel cells (par. 15) electrically connected in series or parallel (pars. 6-7) through an electrically conductive member (51), wherein the electrically conductive member comprises a metal sheet having a three-dimensional porous structure of a continuous skeleton (pars. 40 and 44).

Regarding Claim 36, Draper et al. teach the solid oxide fuel cell comprises an electrolyte (18), an air electrode (16), a fuel electrode (32), and an interconnector (20) connected to the air electrode or fuel electrode and is cylindrical (fig. 4).

Regarding Claim 37, Draper et al. teach the fuel-cell stack as recited above. It is noted that Claim 37 is a product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed.Cir. 1985). The fuel cell stack taught by Draper et al. anticipates that of Applicant's, and therefore, Applicant's process is not given patentable weight in this claim.

Regarding Claims 38-39, Draper et al. teach the electrically conductive member is provided over substantially the whole length in the axial direction of the fuel cell (fig. 5) in the serial direction (fig. 4).

Regarding Claims 40-41, Draper et al. teach the electrically conductive member in the serial direction is divided in to a plurality of parts (par. 40) which are provided over substantially the whole length in the axial direction of the fuel cell (fig. 5)

Regarding Claims 42-43, Draper et al. teach the electrically conductive member in the serial direction is provided only on a part of the fuel cell (figs. 4-5).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draper et al. as applied to Claims 29 and 36-43 above.

Regarding Claim 30, Draper et al. teach the fuel cell stack as recited above. It would have been obvious to laminate a plurality of the metal sheets on top of each other because duplication of parts is obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)

Regarding Claims 31-32, Draper et al. teach the fuel-cell stack as recited above. It is noted that Claims 31-32 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed.Cir. 1985). The

fuel cell stack taught by Draper et al. is obvious to that of Applicant's, and therefore, Applicant's process is not given patentable weight in this claim.

9. Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Draper et al. as applied to Claims 29 and 36-43 above, and further in view of Shigehisa (JP 11-025999 A).

Regarding Claim 33, Draper et al. teach the fuel cell stack as recited above. However, Draper et al. do not teach that the electrically conductive member comprises a folded metal sheet.

Shigehisa teaches a fuel cell stack (1) with a electrically conductive member (10) wherein the conductive member is folded so it will be once piece and reduce contact resistance (par. 15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the nickel foam material (51) and replace the interconnector (40, 43) with a folded conductive member because Shigehisa teaches the conductive member will then be once piece and reduce contact resistance.

Regarding Claims 34-35, Draper et al. and Shigehisa teach the fuel-cell stack as recited above. It is noted that Claims 34-35 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed.Cir.

1985). The fuel cell stack taught by Draper et al. and Shigehisa is obvious to that of Applicant's, and therefore, Applicant's process is not given patentable weight in this claim.

Allowable Subject Matter

10. Claims 44-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not teach or suggest the electrically conductive member in the serial direction is provided only on both ends and the fuel gas feed or fuel gas exhaust side of the fuel cell.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary Best whose telephone number is (571) 270-3963. The examiner can normally be reached on Monday to Thursday, 7:30 - 5:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary Best/
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795